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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,861	02/19/2002	Marc Oliver Kristen	50584	2357

26474 7590 06/20/2003

KEIL & WEINKAUF  
1350 CONNECTICUT AVENUE, N.W.  
WASHINGTON, DC 20036

EXAMINER

LEE, RIP A

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 06/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/049,861

Applicant(s)

KRISTEN ET AL.

Examiner

Rip A. Lee

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-18 is/are rejected.
- 7) ☒ Claim(s) 4-8, 11, 13 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Specification*

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

### *Claim Objections*

2. Claim 4 is objected to because of the following informalities: (i) replace "among" with "the group consisting of" (see lines 3, 6, and 11 of the claim), (ii) place "trihalomethyl" after "NO<sub>2</sub>" so that it does not appear to belong to the Markush group of "sulfonates," (iii) please rewrite the monoanionic charge in superscript notation (line 9). Appropriate corrections are required.

3. Claim 7 is objected to because of the following informalities: First, the ratio described on page 4, line 18, should be restated as "mole ratio," and secondly, the claims calls for reaction of (II) and (III) in a [mole] ratio of 2 to 0.7 - 1.3. Although reasoning for use of a slight excess of (II) is understood, it is not clear why a deficiency of the hydrazine, *i.e.*, 1.3 moles of (III) would be used. Elucidation is requested.

4. Claim 8 is objected to because of the following informalities: The ratio described on page 6, line 2, should be restated as "mole ratio," Appropriate correction is required.

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5. Claim 8 is objected to because of the following informalities: In line 19, the compound of formula (II) is different from that used in step a) since an asymmetric compound is being formed. The claim language should be amended to reflect this fact. Appropriate correction is required.

6. Claim 11 is objected to because of the following informalities: The claim recites use of compounds of formula (I). Parent claim 9, from which claim 6 depends, is devoid of information of regarding compounds of formula (I). Appropriate correction is required.

7. Claim 13 is objected to because of the following informalities: The term "unsaturated" needs to be qualified so that the claim is consistent with the written details of the invention. Oxirane, cyclohexane, benzene, and acetone are "unsaturated" compounds which can not be polymerized by the means described in the present invention. Appropriate correction is required.

8. Claim 18 is objected to because of the following informalities: The dependency of claim 18 needs to be changed, or the claim language needs to be amended because claim 1 is not drawn to a process. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 1 and 7-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claims indicate that atom A in formula (I), (III), and (VI) may be O or S. These two embodiments are not chemically feasible, and therefore, the claims fail to comply with the enablement requirement.

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 1, 2, and 7-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims recite the terms "heteroatom groups" which may be "substituted" with "heterocarbocyclic" rings that may also be "substituted." There are literally hundreds of substituent that are considered as heteroatom groups. Likewise, the nature of the heterocarbocyclic ring is not delineated (*i.e.*, type, number, and location of the heteroatom). Also, the identity, number, and location of the substituents that render the

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molecular fragment "substituted" is not disclosed. Therefore, without further qualification, the claims remain vague and indefinite.

13. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim recites the terms "substituted by heteroatoms" and "heteroatom substituted." Again, there is no indication of the identity, number, and location of these substituents, and there is no indication. Therefore the claim is vague and indefinite.

14. Claim 12 provides for the use of a compound, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 12 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

15. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "in particular" (lines 3, 6, and 7) is a relative term which renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

***Claim Rejections - 35 USC § 102***

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

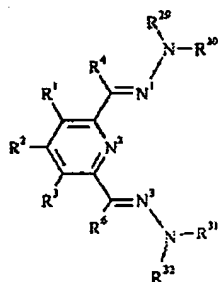
17. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Sengupta *et al.* (Sugarcane Pathology, 1999).

As seen in the abstract, the reference discloses compounds which meet the structural requisites of the present claims. Notably, the compounds contain the moieties R<sup>1</sup> and R<sup>2</sup> which are exemplified by the fragment NR<sup>5</sup>R<sup>6</sup>. Here, R<sup>5</sup> and R<sup>6</sup>, together with the N atom, form a 5-membered ring in which two of the -CH- or -CH<sub>2</sub>- groups are replaced by a suitable heteroatom group which is in turn substituted with a further carbocyclic 6-membered ring which is unsaturated.

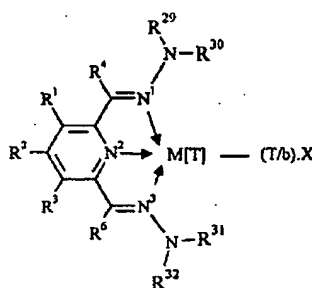
18. Claims 1 and 9-18 are rejected under 35 U.S.C. 102(a) as being anticipated by WO 99/12981 to Britovsek *et al.*

Britovsek *et al.* teaches a compound of general formula P reproduced below in which R<sup>29</sup> to R<sup>32</sup> are hydrocarbyl, substituted hydrocarbyl, heterohydrocarbyl or substituted heterohydrocarbyl; R<sup>29</sup>/R<sup>30</sup> and R<sup>31</sup>/R<sup>32</sup> may be linked to form one or more cyclic substituents (claim 48).

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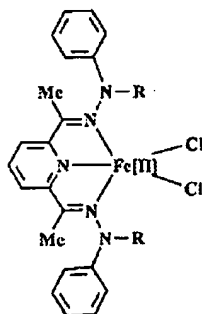


Formula P



Formula T

The reference also discloses transition metal compounds represented by general formula T, reproduced above. The metal is Fe, Co, Mn, or Ru, and X is a conventional ancillary ligand covalently bound to the metal center (claim 46). In another aspect of the invention, compounds of formula T are used to make a polymerization catalyst (claim 6). The other catalyst component is an activator compound (claim 1) such as aluminoxane (claim 11) or  $[\text{PhNHMe}_2][\text{B}(\text{C}_6\text{F}_5)_4]$  (claim 12). The catalyst can be used for (co)polymerization of 1-olefins such as ethylene, propylene, and hexane, as well as methyl (meth)acrylate, acrylonitrile and styrene (claims 19-22). Polymerization conditions are solution phase, slurry phase, or gas phase (claim 25). Examples of the compounds of the invention is the series of dialdiminepyridine bis(anil) complexes, (see list, page 25 and Examples) and, in particular, bis(hydrazone)pyridine complexes (Examples 30 and 31) shown below.





*Allowable Subject Matter*

19. Claims 3-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten to overcome any claim objections and rejections under 35 U.S.C. 112, set forth in this office action, and if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

20. The following is a statement of reasons for the indication of allowable subject matter: The compounds of Britovsek *et al.* possess the general molecular framework of the compounds of the present application, but the reference describes broadly the aldimine substituent as " $R^{29}/R^{30}$  and  $R^{31}/R^{32}$  may be linked to form one or more cyclic substituents."

The present dependent claims are drawn to embodiments in which said "cyclic substituents" are (un)substituted pyrrole, diazolyl, or even triazolyl radicals (present claims 3 and 4), as well as indolyl and carbazolyl moieties (present claims 5 and 6). Therefore, it is deemed that Britovsek *et al.* fails to teach or suggest fairly the subject matter of the present claims. The skilled artisan would not find it obvious to derive such compounds based on the teachings of the prior art. The reference also fails to teach the process steps outlined in claims 7 and 8. Making asymmetric complexes *as per* claim 8 is even less obvious in view of the teachings within Britovsek *et al.*

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21. The prior art made of record but not relied upon is considered pertinent to the Applicant's disclosure. The following references disclose compounds containing the dialdiminepyridine bis(anil) type ligand framework.

U.S. Patent No. 6,472,341 to Kimberly *et al.*

U.S. Patent No. 6,465,386 to Maddox *et al.*

U.S. Patent No. 6,461,994 to Gibson *et al.*

U.S. Patent No. 6,281,303 to Lavoie *et al.*

WO 98/30612 to Brookhart *et al.*

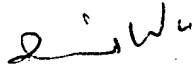
WO 98/27124 to Bennett

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (703)306-0094. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (703)308-2450. The fax phone number for the organization where this application or proceeding is assigned is (703)746-7064. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

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June 12, 2003

  
DAVID W. WU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700